

WHAT IS CLAIMED IS:

1. A folding cylinder comprising:  
a plurality of gripping devices supported on a first rotatable support and including a first gripping device for holding a signature on the cylinder;  
a plurality of tucking devices supported on a second rotatable support, the tucking devices including a first tucking device and a second tucking device, the first gripping device being located circumferentially between the first tucking device and second tucking device; and  
a cover fixed to the second rotatable support and extending circumferentially over the first gripping device between the first tucking device and the second tucking device, the cover having at least one aperture, the first gripping device capable of extending through the at least one aperture.
2. The cylinder as recited in claim 1 wherein the at least one aperture includes a plurality of apertures spaced axially next to each other.
3. The cylinder as recited in claim 2 wherein the first gripping device includes a plurality of axially spaced grippers.
4. The cylinder as recited in claim 2 wherein the first gripping device includes a plurality of axially spaced impaling pins.
5. The cylinder as recited in claim 1 wherein the first and second support are rotatable with respect to each other so as to set a signature fold position.
6. The cylinder as recited in claim 1 wherein the second support is a spider having a first spider arm supporting the first tucking device and a second spider arm supporting the second tucking device, the cover being fixed at one end to the first spider arm and

at another end to the second spider arm. F. 1

109 7. The cylinder as recited in claim 1 further including a second cover covering a second of the plurality of gripping devices.

8. A jaw folder comprising:

a cutting cylinder for cutting a signature from a web;

a transfer cylinder including a plurality of gripping devices for holding a lead edge of the signature, the gripping devices supported on a first rotatable support and including a first gripping device, the transfer cylinder including a plurality of tucking devices supported on a second rotatable support, the tucking devices including a first tucking device and a second tucking device, the first gripping device being located circumferentially between the first tucking device and second tucking device, and the transfer cylinder including a cover fixed to the second rotatable support and extending circumferentially over the first gripping device between the first tucking device and the second tucking device, the cover having at least one aperture, the first gripping device capable of extending through the at least one aperture; and

a jaw cylinder for receiving the signature at a fold created by the first tucking device.

9. The jaw folder as recited in claim 8 wherein the at least one aperture includes a plurality of apertures spaced axially next to each other.

10. The jaw folder as recited in claim 9 wherein the first gripping device includes a plurality of axially spaced grippers.

11. The jaw folder as recited in claim 9 wherein the first gripping device includes a plurality of axially spaced impaling pins.

12. The jaw folder as recited in claim 8 wherein the first and second support are rotatable with respect to each other so as to set a signature fold position.

13. The jaw folder as recited in claim 8 wherein the second support is a spider having a first spider arm supporting the first tucking device and a second spider arm supporting the second tucking device, the cover being fixed at one end to the first spider arm and at another end to the second spider arm.

14. The jaw folder as recited in claim 8 further including a second cover covering a second of the plurality of gripping devices.

15. A method of folding a signature comprising the steps of:

moving a gripping device through an aperture of a cover on a folding cylinder, the cover extending over the gripping device when the gripping device is retracted;

gripping the signature and supporting signature on the cover as the folding cylinder rotates; and

tucking the signature using a folding blade.

16. The method as recited in claim 15 wherein the tucking step includes tucking the signature into the jaw of a jaw cylinder.